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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,050	07/30/2003	Joe C. Y. Hsieh	10082-HSIEH	9975

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EXAMINER

CHERVINSKY, BORIS LEO

ART UNIT	PAPER NUMBER
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2835

DATE MAILED: 02/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/632,050

Applicant(s)

HSIEH, JOE C. Y.

Examiner

Boris L. Chervinsky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-15 and 20-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

The examiner acknowledges the submission of the amendment and arguments/remarks filed on 01/06/05. The following is the revised Office Action, which provides clarification of examiner's position. Applicant is welcome to arrange phone interview with the examiner if any further clarification is needed.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claim 1 is rejected under 35 U.S.C. 102(a) as being anticipated by De Petris.

De Petris discloses rectifier bridge assembly comprising: a rectifier bridge circuit (Fig. 1, Fig. 3A, Fig. 4A) adapted to connect to at least one alternating current source (stator terminals 134, 143, 145, 155); at least two diode compartments 105, 106, 107 operatively connected to the rectifier bridge circuit and a direct current output to convert alternating current into direct current; a heat sink 151 formed with at least two apertures 179 for receiving the at least two diode compartments in spaced apart relation and in substantial contact with said heat sink to disperse heat from the diode compartments.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Petris in view of Saito et al.

De Petris discloses the claimed invention except the heat conductive and electrically non-conductive epoxy contacting all surfaces of the heat sink within the apertures. Saito discloses the diode 50 surrounded by the sealant 57 that contacts all surfaces of the heat sink 35, 56 aperture; the epoxy as sealant for the diode is disclosed by De Petris (col. 2, lines 14-17) and also shown in Fig. 1 of the instant application as prior art. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use epoxy as disclosed by Saito or in Fig. 1 of the instant application to provide good electrical insulation and thermal conduction between the diode and the heat sink.

5. Claims 4, 7, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Petris in view of the prior art disclosed in the instant application.

De Petris discloses the claimed invention except first and second copper tabs that are connected to the contact surface of the aperture and to the rectifier bridge circuitry. The Fig. 1 of the instant application designated as prior art shows the copper tabs 24 and 26 connected respectively to the contact surface of the aperture and to the rectifier bridge circuitry. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to connect diode in the aperture by using copper tabs as disclosed in Fig. 1 of the instant application in the device disclosed by De Petris to provide reliable electrical connection.

6. Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Petris in view of the prior art disclosed in the instant application, as applied to claims 1 and 4, and further in view of Saito et al.

De Petris discloses the claimed invention except having apertures in the heat sink being connected to either positive or negative lead of a direct circuit current, and De Petris does not show fins. Saito discloses apertures in the heat sink 35, 56 being connected to either positive or negative connections (see Fig. 6 through Fig. 8) by soldering and shows fins (see Fig. 3 and Fig. 4). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make connections of different polarity in the heat sink as disclosed by Saito in the device disclosed by De Petris in order to simplify the structure and to lower the production costs.

7. Claims 13-15, 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Petris in view of Saito et al.

De Petris discloses a rectifier bridge assembly for use with an automotive alternator, comprising: a base plate 153 mounted to the alternator and providing a negative lead; an overlying positive lead 151 operative as a heat sink; means for connecting said base plate to said overlying positive lead 152 in an electrically non-conductive relation; a plurality of wells 179 formed into said positive lead in which a first portion of the wells 179 have a bottom formed in said positive lead and a second portion of the wells 179 have a bottom formed in said negative lead 153; a plurality of diodes 106 mounted in the wells 179 and electrically connected to a contact surface of said wells; a plurality of stator connection terminals 134, 143, 145, 155, each receives alternating current (AC)

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from the alternator and connects to a circuit overlying the positive lead 151; the circuit being organized such that each of said stator connection terminals connects in circuit to the base plate across one of the plurality of diodes and to the positive lead across one of the plurality of diodes. De Petris discloses the claimed invention except the heat conductive and electrically non-conductive epoxy contacting all surfaces of the heat sink within the apertures. Saito discloses the diode 50 surrounded by the sealant 57 that contacts all surfaces of the heat sink 35, 56 aperture; the epoxy as sealant for the diode is disclosed by De Petris (col. 2, lines 14-17) and also shown in Fig. 1 of the instant application as prior art. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use epoxy as disclosed by Saito or in Fig. 1 of the instant application to provide good electrical insulation and thermal conduction between the diode and the heat sink.

Regarding to claims 13 and 15, De Petris discloses the claimed invention except the plurality of diodes connect to the bottom surface of the wells and to the circuit by soldering. Saito discloses soldered diodes to the surface of the well and leads 53 must be soldered to the circuit as an inherent feature of the device to be operational. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to connect diodes as disclosed by Saito in the device as disclosed by De Petris in order to provide reliable thermal and electrical contact. The method steps of claims 20-22 are necessitated by the device structure as disclosed by De Petris in view of Saito et al.

Allowable Subject Matter

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8. Claims 16-19 are allowed.

9. The following is a statement of reasons for the indication of allowable subject matter: the prior art does not show the first finned base plate providing a negative lead and the second finned base plate providing positive lead which are in spaced apart relation in combination with other claimed elements.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Boris L. Chervinsky whose telephone number is 571-272-2039. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn D. Feild can be reached on 571-272-2800 ext. 35. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BORIS CHERVINSKY
PRIMARY EXAMINER

Boris L. Chervinsky
2/11/5